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ABSTRACT

The armed services prefer to recruit high quality youth because they perform better and have lower attrition rates. Yet competition for this group is increasing because of fundamental changes in the civilian opportunities that these youth face. One of the most dramatic changes is the enormous increase in the relative returns from attending college that have occurred over the last 20 years. This report summarizes the findings of the first year of a 2-year project that seeks to provide input necessary for the development and expansion of programs intended to improve the services' ability to compete against post-secondary institutions and subsequent civilian skilled employment. Specifically, the report examines trends in college attendance and the economic returns from attending college, describes the options that the military currently offers to combine service and college, and enumerates the types of issues that would need to be considered in developing and expanding recruiting programs that target college-bound youth. The report should be of interest to those concerned about military recruiting as well as to the larger defense manpower research community. (Contains 33 references.) (YLB)

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ATTRACTING COLLEGE-BOUND YOUTH INTO THE MILITARY

Toward the Development of New Recruiting Policy Options

BEST COPY AVAILABLE

BETH J. ASCH
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National Defense Research Institute

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Toward the Development of New Recruiting Policy Options

Beth J. Asch
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Jacob A. Klerman

Prepared for the
Office of the Secretary of Defense

RAND

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PREFACE

The armed services prefer to recruit high quality youth because they perform better and have lower attrition rates. Yet competition for this group is increasing because of fundamental changes in the civilian opportunities that these youth face. One of the most dramatic of these changes is the enormous increase in the relative returns from attending college that have occurred over the last 20 years. This report summarizes the findings of the first year of a two-year project that seeks to provide input necessary for the development and expansion of programs intended to improve the services' ability to compete against post-secondary institutions and subsequent civilian skilled employment. Specifically, the report examines trends in college attendance and the economic returns from attending college, describes the options that the military currently offers to combine service and college, and enumerates the types of issues that would need to be considered in developing and expanding recruiting programs that target college-bound youth. The report should be of interest to those concerned about military recruiting as well as to the larger defense manpower research community.

This report was prepared under the sponsorship of the Office of Accession Policy, Office of the Under Secretary of Defense for Personnel and Readiness. It was prepared within the Forces and Resources Policy Center of RAND's National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, the unified commands, and the defense agencies.

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SUMMARY

Since the end of the cold war, the number of enlisted entrants into the military has declined significantly, reflecting the need for a smaller force in the post-drawdown military. Across the Department of Defense (DoD), total accession requirements declined by 33 percent between 1989 and 1998. Despite this dramatic drop, the armed services are still finding it difficult to meet their enlisted recruiting goals. For example, the Army had to reduce its annual 1997 recruiting mission when it became clear that the original mission was unattainable given its resources. In fiscal year (FY) 98, the number of Army accessions fell short of the Army's annual requirement by over 1 percent, while Navy accessions fell short by over 12 percent.

It is likely that some of these recruiting difficulties reflect relatively recent and possibly temporary changes in the enlisted recruiting environment. For example, the civilian labor market is currently experiencing an expansion. The civilian unemployment rate has declined over the past six years from 7.3 percent in January 1992 to 4.7 percent in January 1998. Like DoD, many civilian employers are having trouble filling vacancies. Other changes include a recent increase in the accession goals that recruiters face, changes in the size of the youth population, changes in relative military pay, and changes in recruiting resources, including advertising budgets and GI Bill benefits. Other research shows that, until recently, these changes could not explain the recruiting difficulties that the services had been experiencing during the 1990s (Asch and Orvis, 1994).

In response to recruiting difficulties, DoD typically uses a traditional set of policies to augment recruiting. These include increasing ad-

vertising, assigning additional personnel to recruiting, raising recruiting incentives, and others. However, as will be discussed below, there are some indications that the current recruiting situation to some extent reflects ongoing and permanent changes in the civilian labor market. These changes suggest that the military will increasingly be competing with civilian post-secondary educational institutions and subsequent skilled civilian employment for high quality youth. Although traditional policies are likely to continue to be effective in expanding enlisted supply, it is worth exploring other policy approaches that directly address this competition and might help combat current and possible future recruiting difficulties. This report focuses on approaches that would make the military more attractive to college-bound youth.

To develop or expand nontraditional policy options to attract college-bound youth into the military, basic information is needed on the college market and the factors that are driving youth interest in college. Also, an understanding of the options that the military currently offers to combine service and college is necessary for determining what new types of options might be developed. Also relevant to the development or expansion of policy options is a list of the issues that would need to be considered before choosing a new program, such as cost and effectiveness. The research presented here seeks to provide some of this information.

COLLEGE TRENDS

Competition in the civilian labor market for more-skilled workers has increased demand for workers with a college education. This rise in demand for more-educated workers and decline in the relative demand for workers with less education have caused an increase in the wages of college graduates relative to high school graduates. The college premium—defined as the percentage difference between the average real wage of a four-year college graduate and a high school graduate—rose from 40 percent in 1979 to 65 percent in 1995.

In response to the dramatic increase in the college premium since the late 1970s, many more high school graduates are enrolling in post-secondary educational institutions. College enrollment rates have risen dramatically since 1980, from 46 percent of youth ages 18–19 in 1980 to 60 percent in 1994. The amount of education indi-

viduals seek to complete has grown as well. Of those who planned to go to school after high school, the percentage of surveyed high quality youth who said they wanted to obtain a graduate degree doubled from 25 percent in FY85 to 50 percent in FY97. Reflecting in part the increased demand for post-secondary education, real college costs have also risen dramatically in recent years. Average real tuition costs and fees rose by roughly 50 percent between 1985 and 1995. The increase was large for both two-year and four-year institutions and for private as well as public institutions.

MILITARY OPPORTUNITIES TO COMBINE COLLEGE AND SERVICE

During the draft and the early years of the All-Volunteer Force, the enlisted force was viewed as relatively unskilled. The primary civilian opportunities for enlisted individuals consisted of working in unskilled or semi-skilled occupations that did not require much post-secondary education. As the military has raised the quality of its recruits over the last decade and as more civilian youth are choosing to attend college, the alternatives available to potential recruits have changed. Increasingly, the civilian opportunities for enlisted individuals include post-secondary education and employment in skill-intensive occupations.

The military offers a myriad of opportunities to combine college and military service so that a high quality youth not only faces the decision of whether to join service, but also whether to attend a post-secondary educational institution before, during, or after an active tour of duty. The numerous options can be characterized as five basic tracks for combining active duty service and post-secondary education:

1. Officer track: The individual first attends a four-year college, and then enters service as an officer.
2. College-enlisted track: The individual first attends college or receives some college credit, and then enters the service as an enlistee.
3. Enlisted-college track: The individual enters the service as a high school graduate, completes a service obligation, leaves the service,

and then attends college as a veteran or, in some cases, as a member of a reserve or guard component.

4. Enlisted-officer track: The individual enters as an enlisted member. During his or her enlisted career, the member leaves the service temporarily to attend a four-year college. Upon receiving a degree, the member returns to serve as an officer.
5. Concurrent track: The individual obtains college credits while in the service, i.e., post-secondary education and service are simultaneous.

Each track consists of a multitude of programs, and the level of benefits associated with each program as well as the design of the various programs have changed over time. Nonetheless, the basic structure of these tracks, with the exception of the college-enlisted track, has remained unchanged since 1980 or even longer in some cases.

The first and fourth tracks—those related to becoming an officer—serve relatively few service members. For example, only some 17,000 individuals became an officer in FY96, accounting for 8 percent of all accessions into the military. The college-enlisted track (track 2) is also quite small. In FY96, only 3 percent of non-prior-service enlistees entered the military with some college education. A key message of this report is that the services should consider greatly expanding this track—by increasing the budgets of current programs and developing new programs as a means of attracting college-bound youth into the military.

The two largest tracks are the enlisted-college track and the concurrent track. The primary program by which individuals enter the military and then attend college after their enlistment—the Montgomery GI Bill (MGIB)—enrolled some 136,000 individuals in FY96, representing 94 percent of all enlistments. That is, nearly all enlistees elect to participate in this college benefit program. The concurrent track is also large. Enrollments in Voluntary Education Programs, the primary way by which individuals can attend a post-secondary educational institution while serving on active duty, were approximately 673,000 in FY96. Although a large number of service members participate in this track, available data suggest that, with the exception of those in the Air Force, relatively few individuals use it to

obtain a B.A. degree, and relatively few complete even some college within their first eight years of service. We find that of those who stay until their mid-career, less than 1 percent obtain a B.A. degree and only 8 percent have some college by eight years of service (YOS). By YOS 12, about 2 percent have a B.A. degree whereas 39 percent have some college.

Of the two largest tracks, the enlisted-college (MGIB) track provides the greatest increment to education for the most individuals. Comparing the educational attainment in 1996 of 30-year-old veterans who left the military and are in the civilian sector with 30-year-old personnel who are still in the military shows that about 90 percent of the veterans had attained some post-secondary education while only 49 percent of the 30-year-old military personnel had. In other words, the most important way to combine military service with college requires that service members leave the military. The fact that most MGIB participants obtain their education after separating implies that the military does not reap an active duty return on the most important college program that it offers. The return would come in the form of having more-educated and presumably more-productive active duty service members.

POLICY OPTIONS

Given the challenges of the current recruiting environment outlined above, considering nontraditional policy options seems warranted. Many factors would need to be evaluated before implementing new programs or expanding existing programs for combining military service and college: the effectiveness of the policy relative to other policies, the specific returns to the individual and to the military, costs, the effect of the policy on the age distribution of the force, and the operational and social distinctions between college-educated officers and college-educated enlistees.

One type of policy would expand the college-enlisted path by targeting the enlistment of more youth with some college. For example, recruiters could target the enlistment of individuals on two-year college campuses to a far greater extent or target the enlistment of dropouts from two-year and four-year post-secondary educational programs. Another way to expand the college-enlisted path is to offer a college-first option to high school youth. For example, re-

cruiters could offer high school seniors an entirely new option that would allow them to attend a two-year or four-year college first (paid for by the military) and then enlist on active duty for a term of service. A variant of this alternative would be to induce the individual to serve in a reserve component while in college and then enter an active component when he or she completed college. Regardless of how the program was structured, enlistees who enter active duty with post-secondary education would have to be paid more when they entered, given the college premium that they could earn if they entered the civilian sector instead.

Another alternative policy could be an enlisted-college-enlisted path, which would represent a sixth way to combine college and military service. Just as the current enlisted-officer track funnels enlistees through college and into the officer ranks, this track would funnel college-educated enlisted veterans back into enlisted service. For example, individuals who use the MGIB after a first term of service could return at a higher pay grade for a second enlistment term. This policy could operate as either an enlistment or reenlistment incentive or both.

The exact structure of these alternative paths or alternative ways of expanding the existing college-enlist path, their feasibility, cost, and their effectiveness requires further study. Just as the Army College Fund was born out of a national experiment that allowed research on the cost-effectiveness of alternatively designed educational benefit programs, we recommend that a national experiment be conducted to examine the cost-effectiveness of alternatively designed paths such as the college-first path.

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Chapter One

INTRODUCTION

Despite declines in the number of enlisted personnel required to enter the military as a result of the defense drawdown in the early 1990s, the services began experiencing recruiting problems in the mid-1990s. These problems have been compounded in the past few years as accession missions have risen. FY97 was a particularly difficult recruiting year for the Army. The Army began the year with a goal to recruit 89,700 enlistees. That goal was reduced to 85,982 in the middle of the year, and then reduced yet again to 82,000. Ultimately, the Army achieved 82,088 enlistments in FY97, just slightly above the lowered goal, but well below the initial goal it had set. Furthermore, recruit quality for all four services had declined in FY97 relative to FY96, as shown in Table 1.1. Recruiting problems continued into FY98. The number of youth entering the Army in FY98 fell short of the Army's accession requirement by over 1 percent, and the number entering the Navy fell short of the Navy requirement by over 12 percent.

In part, these recruiting difficulties reflect recent and possibly temporary changes in the enlisted recruiting environment. For example, the civilian labor market is currently experiencing an expansion. Like DoD, many civilian employers are having difficulties filling vacancies (*Wall Street Journal*, 1998). Also, the civilian unemployment rate declined from 7.3 percent in January 1992 to 4.7 percent in January 1998. Past research (e.g., Fernandez, 1982; Polich, Dertouzos, and Press, 1986) has shown that enlistments fall with the unemployment rate. Other changes in the environment include changes in the size of the youth population, changes in relative military pay, and changes in recruiting resources, such as advertising

Table 1.1

Percentage of FY97 Accessions That Are High Quality

Service	FY96	FY97	Percentage Difference
Army	63	58	–7.9
Navy	61	61	none
Marine Corps	63	62	–1.6
Air Force	82	78	–4.9
DoD	65	63	–3.1

SOURCE: Accession Policy Directorate, Office of the Under Secretary of Defense for Personnel and Readiness.

NOTE: High quality is defined as those youth who are high school diploma graduates and who score in the top half of the Armed Forces Qualification Test (AFQT) distribution.

and educational benefits. Despite the fact that recruiting difficulties would be expected given these changes in the recruiting environment, research shows that these changes in environmental factors could not completely explain the recruiting difficulties that the services experienced in the mid-1990s (Asch and Orvis, 1994).

As will be discussed in Chapter Three, there is reason to believe that these difficulties may in part reflect permanent changes in the civilian labor market that make civilian opportunities more attractive to high quality youth today. Because of these changes, the competition that the military faces for high quality youth is typically not the civilian unskilled labor market, but instead, civilian post-secondary education followed by civilian skilled employment.

The purpose of the research summarized in this report is to provide information for the development of new policy options intended to address this source of competition and, in the process, improve recruiting outcomes. These policies would attract into the military youth who are interested in pursuing post-secondary education—individuals whom we call "college-bound" youth. This is not to say that the expansion of traditional policies such as GI Bill educational benefits, advertising, or recruiters will not continue to be effective. Rather, our focus is on what nontraditional policies might be considered that directly address this trend in the civilian labor market.

That the military is increasingly competing with post-secondary educational institutions and subsequent civilian employment for high quality youth can be seen in a number of ways. Between 1980 and 1992, the military dramatically increased the quality of the recruits it enlisted; the percentage of enlistments that were high quality rose from 35 to 74 over this period.[1] During this same period, a higher fraction of such youth were choosing to attend college. Specifically, among high quality youth who graduated from high school in 1980, an estimated 74 percent went to college or attended a post-secondary educational institution within two years of graduating from high school. Among those who graduated in 1992, this figure rose to about 81 percent.[2] Thus, at the same time that the military sought to target the recruitment of high quality youth, more of those youths chose to go to college.

Another way to view the competition between the armed services and post-secondary educational institutions and subsequent skilled employment is to compare the characteristics of those who enlist with those who enter college.[3] Table 1.2 shows selected mean characteristics of individuals who enlisted, those who attended two-year colleges, those who attended four-year institutions, and those who did not pursue any post-secondary education after high school. The characteristics presented in this table have been shown to be important predictors of enlistment (Kilburn and Klerman, forthcoming; Hosek and Peterson, 1985, 1990; and Kilburn, 1994).

This table shows that enlistees have key characteristics in common with those who attended a two-year college. The average AFQT score and the percentage of the two groups who are high quality are similar. The mean level of their mother's education—an important predictor of the decision to enlist (Kilburn and Klerman, forthcoming)—is also similar. The family income and the fraction who expect more

[1]The percentage of accessions that are high quality have declined since 1992. Nonetheless, relative to 1980, the military's recruit-quality targets were still significantly higher in FY96 and FY97.

[2]The figure for high school graduates in 1980 was generated from the National Longitudinal Survey for Youth. The figure for graduates in 1992 was generated from the National Educational Longitudinal Study (NELS).

[3]In this context, we use the term "skilled labor" to mean workers with more education.

Table 1.2

Selected Mean Characteristics of Enlistees, College Attendees, and Youth Who Did Not Attend a Post-Secondary Educational Institution, 1994

Characteristic	Enlisted	Attended Two-Year College	Attended Four-Year College	No Post-Secondary Education
AFQT score	45.60	44.10	63.70	29.40
Fraction high quality	0.38	0.40	0.73	0.16
Mother's education (years)	12.90	13.40	14.60	12.50
Fraction with working mother	0.86	0.87	0.91	0.79
Family income (thousands $)	40.80	47.00	67.30	31.40
Fraction expect more education	0.83	0.93	0.97	0.53

SOURCE: National Educational Longitudinal Study, Third Follow-Up (1994).

education are somewhat lower among enlistees, but even these characteristics are more similar to those of the two-year college attendees than to the characteristics of either the four-year college attendees or those who did not pursue post-secondary education. In other words, compared to the individuals who actually enlisted, the group that attended a two-year college has the set of characteristics that make them the most promising source of additional recruits.

One of the traditional ways that the military has attracted college-bound youth and has responded to the competition posed by post-secondary educational institutions and subsequent skilled civilian employment has been to offer educational benefits in the form of the GI Bill program. Indeed, enrollment rates in the Montgomery GI Bill (MGIB) program have risen dramatically in recent years.[4] In FY86, 64 percent of accessions enrolled in this program. By FY96, this figure had risen to 94 percent.[5] The fact that nearly every enlistee en-

[4]The Montgomery GI Bill began in July 1985. Under this program, all active duty recruits are automatically enrolled into the program. Recruits can decline the benefits and disenroll themselves. Once enrolled, $100 is deducted from the enlistee's monthly paycheck for a period of 12 months. Individuals are eligible to receive the educational benefits if they satisfy a minimum service requirement as well as meet other restrictions.

[5]Calculations were made using the FY96 Montgomery GI Bill data file provided by the Defense Manpower Data Center.

rolls in the MGIB indicates that today's recruit no longer fits the traditional picture of a military enlistee—a "blue-collar" worker who has no interest in continuing his or her education beyond high school. Instead, youth who enter the military are highly interested in post-secondary education.

Each year the Department of Defense administers the Youth Attitude Tracking Study to a sample of roughly 10,000 American youth. When high quality males in the sample who were between the ages of 16 and 21 were asked what they thought they might be doing after they got out of high school, 75.7 percent in FY85 indicated that they planned on going to school. By FY97, this figure had risen to 80.9 percent. The increase was even greater for high quality females; the figure rose from 73.7 percent in FY85 to 86.7 percent in FY97. Over the same period, interest in the military among high quality males (age 16–21) declined. In response to the question, "How likely is it that you will be joining any military service in the next four years?" 20.9 percent in FY85 said definitely or probably. This figure rose to 24.9 in FY90, but fell to 19.7 in FY97. Thus, while interest in college has risen, interest in the military has fallen.[6]

Recent recruiting difficulties together with the declining interest in military service among high quality youth suggest that the traditional ways that the military has responded to competition from the college market may be insufficient. Either existing programs need to be expanded or new policy options need to be considered.[7]

To develop policy options to attract college-bound youth into the military, some basic information is needed on the college market and the factors that are driving youth interest in college. Also, an understanding of the options that the military currently offers to combine service and college is necessary for determining what new types of

[6]As discussed in Orvis, Sastry, and McDonald (1996), the decline in positive propensity implies a decline in enlistment rates, but the decline in the enlistment rate will be less than the decline in positive propensity. Therefore, the decline in enlistments will be less than the decline in positive propensity discussed in the text. Also, since the required number of enlistments has declined as a result of the drawdown, a decline in the enlistment rate does not necessarily imply that recruiting requirements will not be met.

[7]In addition, constant attention must be paid to the efficient management of recruiting resources, including recruiters.

options might be developed. Also relevant to the development of policy options is a list of the issues that would need to be considered before choosing a new policy, such as cost and effectiveness. The research presented here seeks to provide this information.

In Chapter Two, we briefly discuss the framework underlying our analysis and the data sources we relied upon. Chapter Three summarizes recent trends in post-secondary education and the civilian labor market. Chapter Four provides an overview of the various opportunities that the military offers to combine active duty service and college. Chapter Five discusses the types of issues that would need to be resolved in developing a successful set of policies, with examples of policy options. In Chapter Six, we conclude with a summary of our findings and discuss areas for future research.

Chapter Two

FRAMEWORK AND DATA

This chapter provides a broad framework for our analysis by enumerating the factors that affect the supply of high quality youth to the armed forces. These factors are derived from existing economic models of enlistment supply. A more detailed discussion of these models can be found in Warner and Asch (1995) and Kilburn and Klerman (forthcoming). The chapter also enumerates the data sources we use to conduct the analysis presented in later chapters.

FACTORS AFFECTING ENLISTED SUPPLY AND DEMAND

Generally speaking, enlistments can be thought of as being the result of the interaction of supply and demand. On the *supply* side, a number of factors play a role. First, enlistments are affected by the size of the youth population and its quality composition, i.e., the fraction that are high school graduates and who would score in the upper half of the AFQT test score distribution. Second, recruiting resources affect enlistments as well. These include recruiters, advertising, and the various enlistment incentives that the services target toward recruits, such as the GI Bill, enlistment bonuses, and the Army College Fund, Navy College Fund, and Marine Corps College Fund.

Finally, the civilian opportunities that youth face affect their decision to enlist in the military. Traditional analysis has tended to focus primarily on enlistees' job market opportunities.[1] Civilian pay relative

[1]Examples of these studies include Polich, Derfouzos, and Press (1986), Daula and Smith (1985), and Goldberg (1991). Although these studies ignore college oppor-

to military pay and the youth unemployment rate are examples.[2] However, as youth interest in post-secondary education has risen, analysis of enlistments should also recognize the importance of schooling opportunities and costs, including financial aid, tuition costs, and room and board costs. This study represents a step in that direction.

Supply factors are not the only determinants of enlistments. There also are demand factors, by which we mean factors that the services and the various recruiting commands can influence. For example, the services can influence the contract attributes that are available to youth. Such attributes include the occupations or occupational groups that individuals can enter, the number of years for which they can enlist, overseas assignment opportunities, and whether they have station of choice, training of choice, and the like. In addition, the services can influence the management of recruiting resources, including the allocation of recruiting resources across resource types and across geographic areas, and the management of recruiters. The latter includes recruiter quotas for the quality and quantity of enlistments and the various recruiter incentive plans that are used by the services to motivate effort and productivity among recruiters.

This study does not attempt to estimate an expanded model of enlistment supply that includes variables that reflect the impact of post-secondary educational opportunities and costs. Such an analysis is under way by Warner, Paine, and Simon (1998). Instead, we rely on available data sources as well as on published statistics and earlier studies to describe college trends and opportunities for youth to combine military service and college. Since not all of these trends and opportunities can be easily represented by a set of variables that can be incorporated into an empirical model, this analysis supplements the more formal empirical analysis of estimating an expanded enlisted supply.

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tunities and costs in specifying youth civilian opportunities, they do recognize military educational benefits as a determinant of enlisted supply.

[2]These studies typically compare military wages to the mean wages of manufacturing workers who tend to be high school graduates in the civilian sector. One implication of the current study is that it may be more appropriate to compare enlistees' wages with the wages of civilian workers with some college education as well.

DATA

We rely on both published statistics and new tabulations to describe college trends and youth opportunities to combine college and military service. When citing published statistics, we reference the document from which they came. When presenting original tabulations generated for this study, we reference the data source used. Table 2.1 lists our civilian and military data sources. Our description of college trends relies on several civilian data sources as well as recent studies of these trends. Because males constitute the overwhelming majority of recruits, we often present data only for young men.[3]

The description of opportunities to combine service and college is based on materials from and discussions with service personnel. A detailed description is provided in a companion piece to this report, *Educational Benefits and Officer-Commissioning Opportunities Available to U.S. Military Servicemembers*, by Michael R. Thirtle (MR-981-OSD, forthcoming). We also rely on numerous data sources to describe usage of the various programs offered by the military to combine service and educational benefits. These include the Mont-

Table 2.1

Data Sources Used in the Analysis

Data Source	Source Agency
Civilian	
National Longitudinal Survey of Youth (NLSY)	Bureau of Labor Statistics
National Educational Longitudinal Study (NELS)	National Center for Education Statistics
Current Population Survey (CPS)	Bureau of Labor Statistics
Military	
Youth Attitude Tracking Study (YATS)	DMDC
Montgomery GI Bill data file	DMDC
Active duty records	DMDC
Enlisted Cohort Database	RAND, based on DMDC data

[3]Note, however, that growth in college enrollment and the college wage premium was slightly larger for women relative to growth in these for men.

gomery GI Bill data set for the end of FY96 and the enlisted and officer master files for FY77, FY88, and FY96, provided by the Defense Manpower Data Center (DMDC). We also use two data files that were created at RAND for earlier research projects. The first is the Enlisted Cohort Database, which is derived from DMDC data. Beginning with the FY78 cohort, the file tracks enlisted accession cohorts through FY96. The file includes information on individuals over their military career. The other file was the NELS analysis files, which contain demographic information, including post–high school activities through two years after graduation, for a national sample of individuals who graduated from high school in 1992. We generated statistics from two other civilian data sets, the National Longitudinal Survey of Youth (NLSY) and the Current Population Survey (CPS). Finally, the report presents statistics obtained from published sources such as the *Statistical Abstract of the United States* (U.S. Bureau of the Census). With our findings in the remainder of the report, we indicate from which source the results were derived.

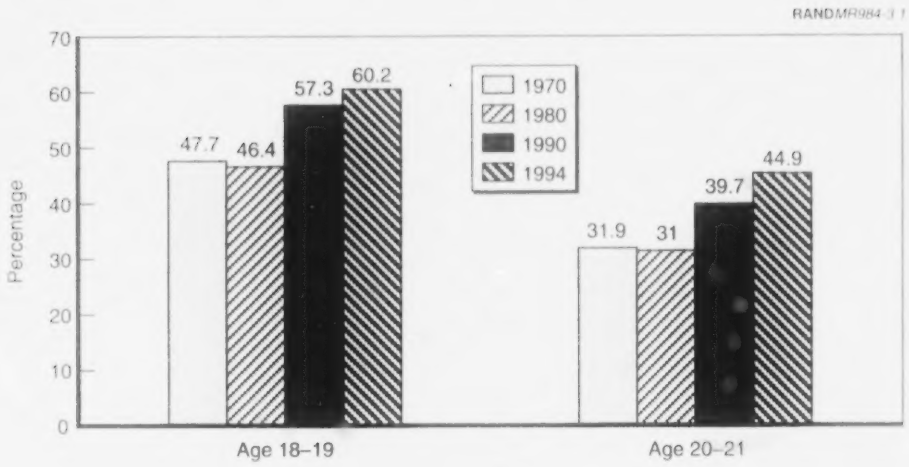
Chapter Three

TRENDS IN POST-SECONDARY EDUCATION

ATTENDANCE AND COMPLETION RATES

Probably the most basic fact relating to post-secondary education in recent years has been the dramatic increase in enrollment rates since 1980. This trend is shown in Figure 3.1 for two age groups of interest to the military, those age 18–19 and those 20–21. Enrollment rates in post-secondary institutions were fairly steady between 1970 and 1980. However, between 1980 and 1990, enrollment rates rose by over 25 percent, from 46.4 percent of youth age 18–19 to 57.3 percent. The increase, nearly 30 percent for the older age group, continued into the 1990s. By 1994, enrollment rates for the age 18–19 group rose to 60.2 percent, while the rates rose to 44.9 percent for the age 20–21 group.

A related trend is that a greater fraction of the U.S. population has completed post-secondary education. Figure 3.2 shows the percentage of males who have completed a four-year college between 1970 and 1995. This percentage has increased for all race/ethnic groups shown, but the most dramatic increase has been for black males. In 1970, only 4.2 percent had completed a four-year college. This figure more than doubled to 13.6 percent by 1995. Hispanics experienced the smallest growth. In part, this slower growth reflects increased immigration over the period and the shift in source countries toward southern-hemisphere Spanish-speaking countries. Since immigrants from these countries typically have less education than native-born males of similar age (Borjas, 1990; Schoeni, McCarthy, and Vernez, 1996), inclusion of immigrants in



SOURCE: *Statistical Abstract of the United States*, 1996.

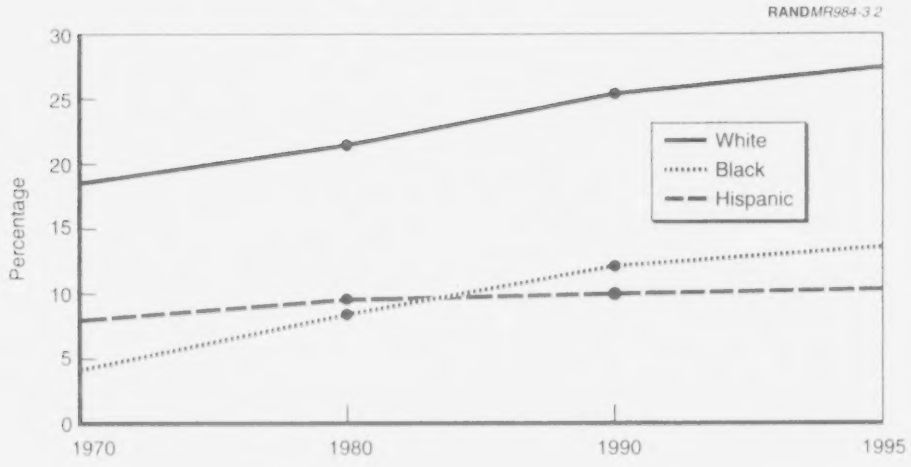
Figure 3.1—Enrollment Rates in Post-Secondary Educational Institutions

the Hispanic group in Figure 3.2 serves to lower the attainment rate of a four-year college education for this group.

Not only is a higher percentage of youth attending a post-secondary educational institution, but the amount of education they seek has risen as well. Figure 3.3 shows the educational aspirations of the high quality youth in the YATS who said that they wanted to "go to school" in the coming year. In the fall of FY85, about 23 percent of these youth said that they wanted to go to graduate school. This figure more than doubled by the fall of FY97. Fewer youth wanted to stop with a B.A. degree or a two-year college degree.

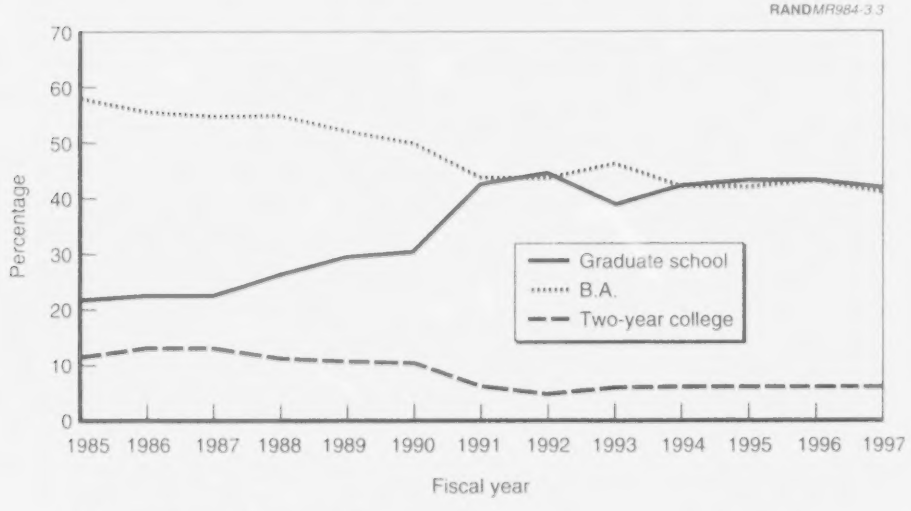
COSTS AND FINANCIAL AID OPPORTUNITIES

The enormous growth in the real cost of attending a post-secondary educational institution has been another major trend in post-secondary education. This growth is shown in Table 3.1, which presents the average real cost of attending public and private two- and four-year colleges in 1985 and 1995. Regardless of institution type—private versus public or two-year versus four-year—the average real cost increased significantly during the 10-year period



SOURCE: *Statistical Abstract of the United States*, 1996.

Figure 3.2—Percentage of Males Completing a Four-Year College



SOURCE: Youth Attitude Tracking Study.

Figure 3.3—Percentage of High Quality Youth (age 16–21) with Educational Aspiration (Interest in Attending Post-Secondary Educational Institution)

Table 3.1

Average Cost of Two-Year and Four-Year Colleges (1998 dollars)

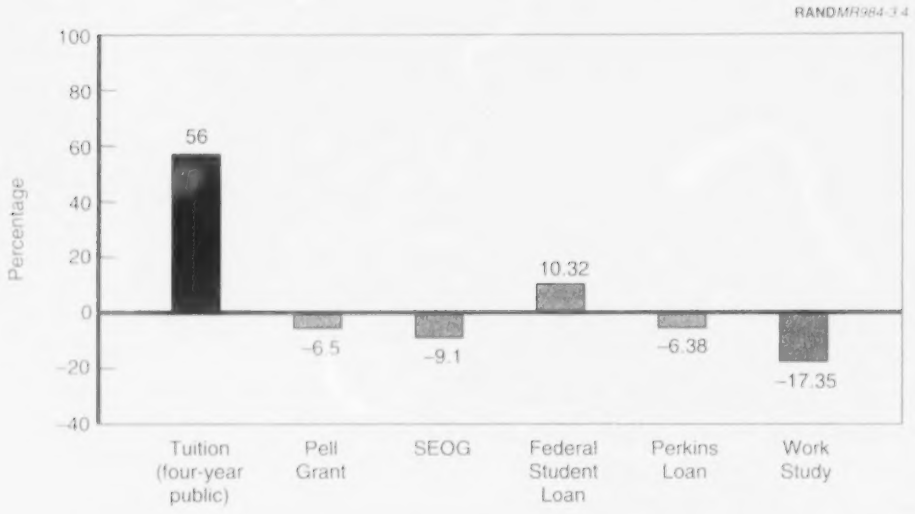
	Tuition and Fees ($)			Board and Dormitory ($)		
	1985	1995	% change	1985	1995	% change
Public:						
Two-year college	879	1,304	48	3,345	3,228	–3
Four-year college	2,085	3,257	56	3,781	4,479	18
Private:						
Two-year college	5,244	7,500	43	4,090	4,582	2
Four-year college	10,296	15,851	54	5,116	7,101	39

SOURCE: Statistical Abstract of the United States, 1996.

1985 to 1995. Room-and-board costs also rose substantially for public and private four-year colleges.[1]

Whether the net cost of post-secondary education to the individual has risen depends in part on whether increases in financial aid have kept pace. To see how one component of financial aid has changed, we examined the change in real average financial aid awards offered by various federal programs. On average, real federal financial aid programs have risen by less than real tuition costs, as shown in Figure 3.4. Only average federal student loan awards have risen faster than inflation, implying real growth in this source of aid. Nonetheless, even this source has not kept pace with real tuition cost growth. Note that students may combine award sources. Although we found no information regarding trends in levels of total financial aid packages, we learned that the growth over this period in the total number of recipients of Pell Grants and Supplemental Education Opportunity Grants (SEOGs) outpaced growth in college enrollment, which implies that even if the levels of these awards were not keeping up with tuition increases, they were probably offset to some degree by a rise in the number of students who obtained the awards (U.S. Bureau of the Census, 1997). In terms of composition of financial aid packages, a well-documented trend is a shift from grants to loans

[1]Note that about one-third of four-year institutions were private in 1995, while only about 3 percent of two-year institutions were private.



SOURCE: *Statistical Abstract of the United States*, 1996.

Figure 3.4—Percentage Change in Real (1998 dollars) Tuition Costs (1985–1995) and Real Average Awards

(Cuccaro-Alamin and Choy, 1998; King, 1996). The College Board (1997) estimates that while loans accounted for just over 40 percent of all aid in academic year 1980–1981, loans now constitute nearly 60 percent of aid. Another trend is that aid from the student's institution has been the fastest growing source of financial help since 1985 (Lee and Clerry, 1997).

COLLEGE PREMIUM

If the demand for education was stable, we would expect that enrollment would drop when college costs grew. In fact, over the last decade college enrollment rose as college costs grew. The growth in demand for higher education reflects the fact that the relative labor market return to attending college has risen dramatically over the last two decades (Gottschalk, 1997; Johnson, 1997; and Levy and Murnane, 1992). Estimates are that the college premium—defined as the percentage difference between the average real wage of a four-year college graduate and a high school graduate—grew by nearly two-thirds, rising from 40 percent in 1979 to 65 percent in 1995

(Mishel, Bernstein, and Schmitt, 1996).[2] In part the rise in the college premium over the period results from a modest increase, 4.3 percent, in the average real wage of college graduates. But, in larger part, it results from the larger decrease, 11.8 percent, in the average real wage of high school graduates (Mishel, Bernstein, and Schmitt, 1996).

The fact that wages of college graduates have continued to rise at the same time that their numbers grew implies that the demand for education has outstripped supply (Gottschalk, 1997). Most explanations for the unprecedented surge in demand for educated workers have focused on the rise in demand for more-skilled relative to less-skilled labor. In addition to the increase in returns to education, the returns to another measure of skill—experience—has also grown. The consensus appears to be that demand for skilled workers reflects technical changes, such as widespread use of computer technology in many jobs, that have favored more-skilled workers relative to less-skilled workers (Johnson, 1997; Topel, 1997).

Evidence shows that in addition to those who earn a college degree, even those who do not complete a four-year college degree earn a return on their college education. Kane and Rouse (1995) estimate that, as of 1990, the college premium for those who graduated from high school between 1979 and 1983 was 21 percent for those who earned a two-year degree and 8 percent for those who obtained some college but did not earn a degree.[3]

The fact that even those who have some college get a return provides justification for the military's current practice of allowing recruits who have already obtained some college education to enter service at a higher pay grade. For example, the Army allows those with between 30 and 59 semester hours (between one and two years of college) to enter as an E-2. Those with 60 or more hours (more than

[2]Gottschalk (1997) estimates the college premium to be 31 percent in 1979 and 53 percent in 1993, a 71 percent increase.

[3]For those who earn a bachelor's degree, Kane and Rouse estimate a college premium of 34 percent. This figure is not comparable to the four-year college premium discussed earlier in the text (65 percent in 1995). First, the Kane and Rouse figure is computed as of 1990. The earlier figure was for 1995. Second, the Kane and Rouse figure applies only to those who graduated from high school between 1979 and 1983. The earlier figure applies to all graduates.

two years) can enter as an E-3, and those with a B.A. degree can enter as an E-4 (see U.S. Army Recruiting Command, 1997).[4,5]

DROPOUT RATES FROM POST-SECONDARY EDUCATIONAL INSTITUTIONS

Although post-secondary education is an important source of competition for high quality recruits, it may at the same time be an important source of potential recruits. Many college attendees drop out of school and fail to complete their education. For example, of those freshman males who started in the 1989–1990 school year, 49.1 percent of those in a two-year program had neither attained a degree nor were still enrolled by 1994. For those in a four-year program, this figure was 30.9 percent (U.S. National Center for Education Statistics, 1996). Thus, roughly half of those in two-year programs and one-third of those in four-year programs drop out of school. Whether these dropouts constitute a new and important pool of college-educated recruits will depend on their characteristics. For example, if most are female or have low AFQT scores, then the pool may be a relatively unattractive source of new recruits. A future task of this project will be to describe the characteristics of college dropouts to ascertain their potential to enter military service.

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[4]Note that if the military rather than the individual had paid for the education, the military may not have to pay higher wages, because the recruit had already received additional value for military service in the form of educational benefits.

[5]An open question is what the college premium is in the military. This area requires further research.

Chapter Four

MILITARY OPPORTUNITIES FOR COMBINING SERVICE AND POST-SECONDARY EDUCATION

The services offer a variety of programs to combine military service and post-secondary education, which allows them to respond to the competition posed by post-secondary institutions and the skilled civilian labor market. We next provide an overview of these programs and discuss the relative magnitude of the opportunities. A comprehensive discussion of the programs is given in a companion document, *Educational Benefits and Officer-Commissioning Opportunities Available to U.S. Military Servicemembers*, by Michael R. Thirtle (MR-981-OSD, forthcoming).

The military offers five basic tracks for combining active duty service and post-secondary education:

- Officer track: The individual first attends a four-year college, and then enters the service as an officer.
- College-enlisted track: The individual first attends college or receives some college credit, and then enters the service as an enlistee.
- Enlisted-college track: The individual enters the service as a high school graduate, completes a service obligation, leaves the service, and then attends college as a veteran or, in some cases, as a member of a reserve or guard component.
- Enlisted-officer track: The individual enters as an enlisted member. During his or her enlisted career, the member leaves the service temporarily to attend a four-year college. Upon receiving a degree, the member returns to serve as an officer.

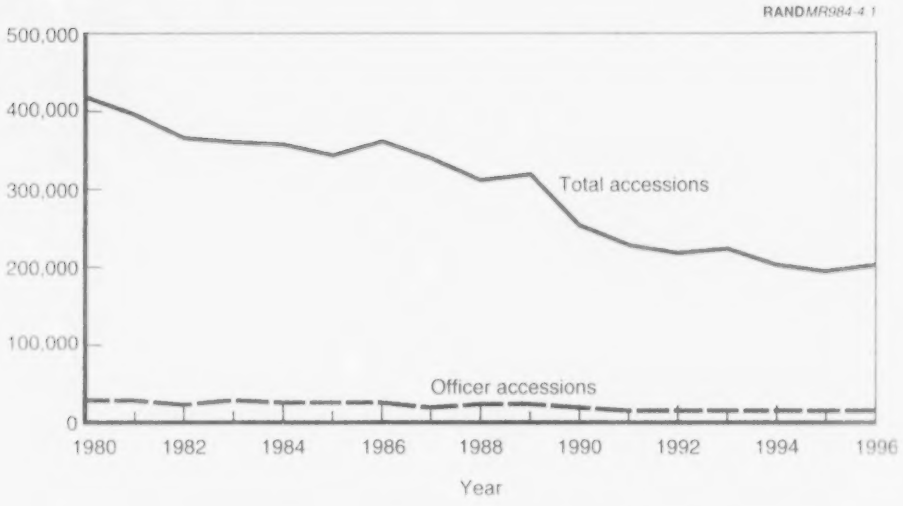
- Concurrent track: The individual obtains college credits while in the service, i.e., post-secondary education and service are simultaneous.

Each track consists of a multitude of programs, and the level and structure of benefits associated with various programs have changed over time. Nonetheless, the basic structure of the tracks, with the exception of the college-enlisted track, has remained unchanged since 1980 or even longer in some cases. For example, prior to 1985, the primary enlisted-college track was VEAP (Veteran's Educational Assistance Program). In 1985, VEAP was replaced with the Montgomery GI Bill program. This new program changed the benefit levels, the way contributions were made, and the refund policy. Nonetheless, the basic structure of the track remained the same—the individuals first performed their military service obligation, and then they attended a post-secondary educational institution.

The officer track encompasses the various means by which individuals become officers, including Reserve Officer Training Courses (ROTC), Officer Candidate Training and Officer Candidate School (OCT/OCS), and the three service academies. In terms of magnitude, the officer track offers college opportunities to relatively few youths. Figure 4.1 shows officer accessions as well as total accessions between 1980 and 1996, where total accessions is defined as the sum of officer, non-prior-service, and prior-service enlisted accessions. Officer accessions have become an increasingly larger fraction of total accessions in recent years. Nonetheless, in 1996, officers were only 8 percent of overall active duty accessions.

The second track is the college-then-enlist or the college-first path. Numerically, this track is quite small. Figure 4.2 shows the percentage of non-prior-service enlisted accessions in FY88 and FY96 with more than a high school education. Overall, 2.4 percent of non-prior-service enlisted personnel entered with more than high school in FY88. This figure was 3.0 percent in FY96. These figures vary with service. In FY96, 5 percent of Army enlistees and 2.4 percent of Air Force enlistees entered with some college. The figures were even smaller among Navy and Marine Corps enlistees.

As noted earlier, the services allow individuals with some college to enter the military at a higher pay grade. Furthermore, the Army and



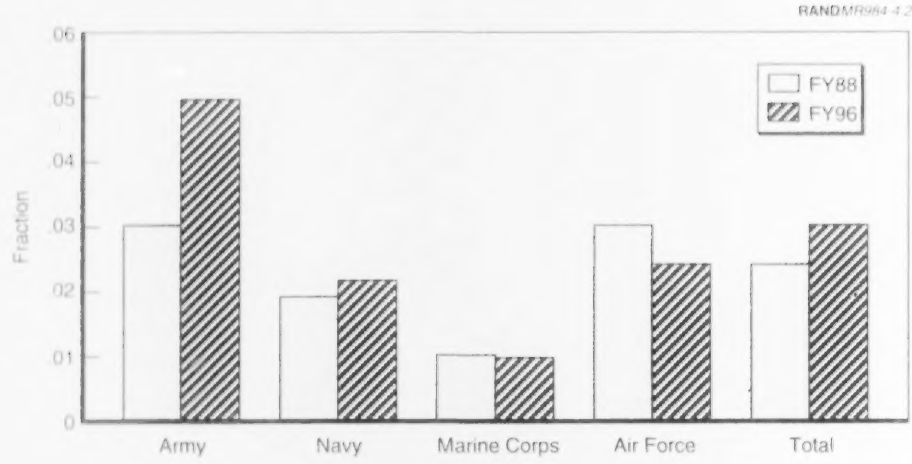
SOURCE: Selected Manpower Statistics, 1980–1996.

Figure 4.1—Active Duty Accessions

Navy both have a college loan repayment program for those who enter the enlisted ranks with college-related federally funded loans. The Army plan is the more generous program. Under this plan, the Army will repay one-third or $1500 of an outstanding eligible loan, whichever is greater, for each year of service, up to $65,000. Under the Navy program, the maximum amount paid is only $10,000 and requires a four-year enlistment. Both programs require that the individual enlist in a critical occupational area and be a high quality recruit. Accepting the loan repayment program precludes MGIB enrollment.

Given the small numbers in Figure 4.2, it is not surprising that these programs currently serve few enlistees. According to Army enlistment data, only 4.8 percent of high quality Army accessions took the loan repayment option in FY96.[1] In FY88, this figure was less than 1

[1]These figures were provided by John Warner, who computed them using the Army's "Minimaster" file. Permission to use the figures in this report was granted by the U.S. Army Recruiting Command.



SOURCE: DMDC Active Duty Master Files.

NOTE: The figures are likely to be biased downward for two reasons. First, the data upon which the figures are based are initially gathered when the individual signs an enlistment contract, which might precede the date of accession by several months. Although the data are updated later, after the accession date, it is possible that individuals who signed contracts while still in high school or in college did not have their accession data updated. Consequently, the data might not include education the individual obtained after he or she signed an enlistment contract. Second, the data indicate only the highest year of education at entry. If individuals completed only a partial year of college or post-secondary education, this fact will not be incorporated into the data. Thus, the fractions above do not include those with more than a high school education but less than one year of college.

Figure 4.2—Fraction of Non-Prior-Service Accessions Entering with Post-Secondary Education

percent. Although the program has grown, it still is only a marginal fraction of enlistments. As will be discussed in Chapter Five, a possible policy option is to expand this program as well as introduce new policies that allow enlistees to attend college before enlistment.

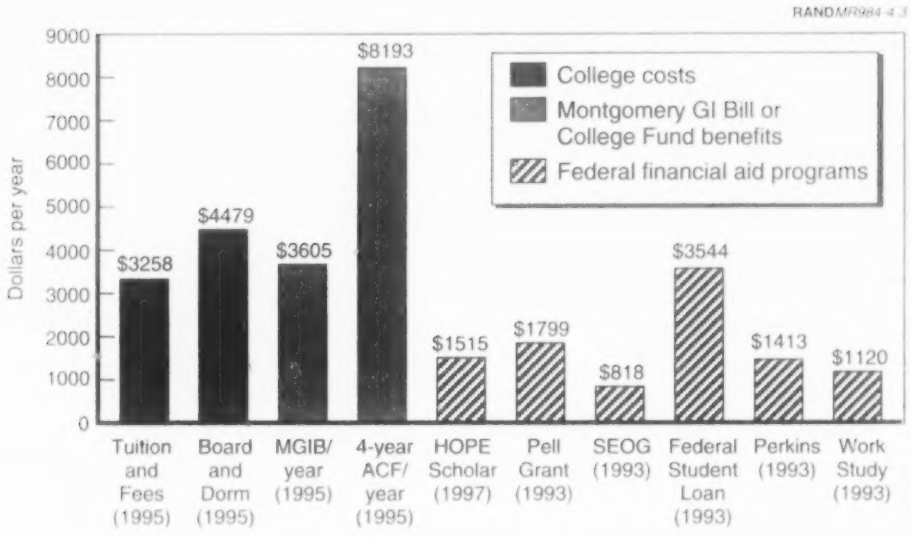
The third track is the enlisted-college track. As noted above, since July 1985, enlistees follow the enlist-college track through the Montgomery GI Bill program. New active duty recruits are automatically enrolled in the program, although they can formally decline enrollment within two weeks of their enlistment date. Once enrolled, $100 per month is deducted from their paycheck for 12 months. To earn the benefit, however, individuals must meet other requirements,

such as completion of their basic service obligation. Individuals can use the benefit while they are still in the service if they have met the service requirement, but they face more restrictions if they do so. For example, unlike veterans who use the benefit after leaving the service, those who use the benefit while on active duty are constrained to use the benefit only for tuition and fees and not for other expenses. Benefits are paid directly to the post-secondary education institution by the Department of Veterans Affairs. Since 1990, the amount of the benefit has varied with the rate of inflation. In 1997, the benefits were just under $16,000. In 1998, benefits were $19,008. Under the Army College Fund (ACF) and Navy College Fund (NCF), the benefit levels are more generous for high quality recruits who enlist in hard-to-fill occupational areas and for specific lengths of service. For example, in FY97 high quality individuals who enlisted for four years and chose a hard-to-fill occupation would receive a total benefit of $40,000 under the combination of the MGIB and Army College Fund.

The enlisted-college MGIB track is a more populous track than the officer track. It also offers opportunities to personnel in different services and with different demographic characteristics. In FY90, 188,598 recruits enrolled in the Montgomery GI Bill. Enrollments fell to 136,051 in FY96 primarily because of the drawdown.[2] In FY96, most enrollments (82 percent) were male. About 10 percent of enrollments were Hispanic, while 18 percent were black. The Army accounted for 34 percent of enrollments, the Navy accounted for 31 percent, and the Air Force and Marine Corps each accounted for 17 percent of FY96 enrollments. These figures generally correspond to the demographic and service representation of non-prior-service accessions in general in FY96 (Office of the Assistant Secretary of Defense, 1996).

Figure 4.3 compares the average costs at a four-year public college with the average financial aid award under the various federal pro-

[2]Enlistments dropped by roughly 20 percent between FY90 and FY96. We find a 28 percent drop in enrollment during this period. The larger drop in enrollments in part reflects problems we had in determining accession date in the MGIB data file. We deleted individuals for whom we could not determine their accession date. Lack of accession date was a more severe problem for individuals whose contract date suggested they were part of the FY96 entry cohort.



SOURCE: *Statistical Abstract of the United States*, 1996.

Figure 4.3—Comparison of MGIB and ACF Real Benefit Levels with Average Costs at a Four-Year Public College and Average Federal Financial Aid Awards (1998 dollars)

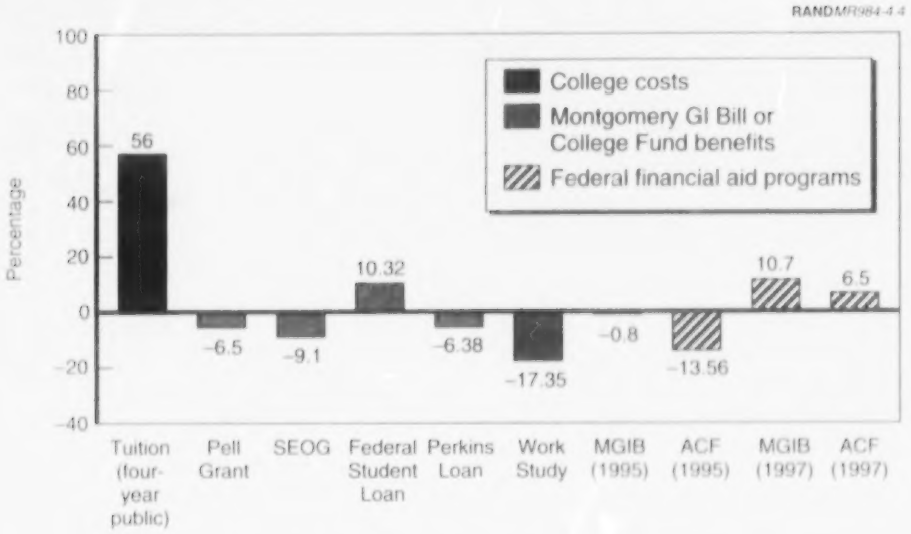
grams as well as with the maximum MGIB benefits and with the maximum ACF benefit for a four-year enlistment in 1995. To make the MGIB and ACF benefit figures more comparable with the cost figures, which are on a per-year basis, we computed a per-year benefit under the MGIB and ACF. To do this, we multiplied the monthly benefit under each program by nine under the assumption that an individual would attend each school year for nine months. Because the most recently available numbers for the federal financial aid figures are for 1993, Figure 4.3 compares the 1993 financial aid numbers with costs and MGIB benefits in 1995, although both figures are computed in 1998 real dollars. Strictly speaking, the financial aid programs, including the MGIB and ACF, are not directly comparable because they have different eligibility requirements and different restrictions on their use. In the case of MGIB and ACF, the benefits can be used only after a member has fulfilled a military service requirement. Nonetheless, the comparisons in Figure 4.3 provide an overall

picture of the maximum benefit that the military offers relative to other federal programs that are available to youth.

One reason why the MGIB, the Army College Fund, and the Navy College Fund are such popular programs among new recruits is that the benefits are generous relative to other federal financial aid programs and relative to college costs. As Figure 4.3 indicates, maximum Army College Fund benefits, equal to $8183 on a per-year basis, would cover not only average tuition and fees at a four-year public college, but also room and board costs. The maximum MGIB benefit, equal to $3605 on a per-year basis, would cover average tuition and fees but not room and board. In contrast, with the exception of the federal student loan program, individually none of the other federal financial aid programs would cover even average tuition and fees at a four-year school. However, some students may receive multiple sources of aid, raising the total level contributed by federal financial aid sources. Thus, military education benefits, particularly the college funds, compare favorably with other programs as well as with college costs.

Despite the relative generosity of the military benefits, the rate of growth in these benefits has not kept pace with the rise in real college costs. Figure 4.4 compares the growth in average real tuition costs with the growth in MGIB and ACF benefits since 1985. For comparison, Figure 4.4 also shows the growth in average real financial aid awards shown in Figure 3.4. Until 1995, MGIB and ACF benefits had grown in nominal terms but slightly less than the change in inflation. Consequently, there has been a shrinkage in these benefits. In 1995, the real value of the ACF had declined relative to 1985. As a result of the increase in 1997 to deal with recruiting shortfalls, the real growth in the MGIB and ACF since 1985 has been slightly ahead of inflation. Nonetheless, the growth still lags the growth in real college costs.

Although active personnel are permitted to use MGIB benefits while in the service, the program was primarily designed to be used after the member separates from active duty. A weakness with this design from the perspective of DoD is that the military foots the bill for this human capital investment, but it does not realize a return on the investment unless the individual joins a reserve component.



SOURCE: *Statistical Abstract of the United States*, 1996, and U.S. Army Recruiting Command, 1997.

Figure 4.4—Percentage Increase in Real (1998 dollars) Tuition Costs (1985–1995), Real Awards for College Freshmen (1985–1993), and in MGIB and ACF Benefits

Consistent with this design, we find empirically that service members typically use their MGIB benefits after leaving the service. Using the FY96 MGIB data file provided by the Defense Manpower Data Center, we find that nearly 90 percent of the FY86 and FY90 enlistment cohorts used their MGIB benefits after they left the service. Specifically, by the beginning of FY96, about 11 percent of the cohort entering in FY86 had used MGIB benefits before exiting the service and fewer than 12 percent of the cohort entering in FY90 used MGIB benefits before separating. In contrast to the MGIB, which is designed primarily to deliver the educational benefit after the individual completes his or her tour of duty, educational benefits offered before an individual serves or benefits that encourage the individual to accumulate education while in the service would have the advantage of yielding a return to the military as well as to the individual. The return comes in the form of the service member being more skilled during his or her obligation.

A second way enlisted personnel can combine military service and college is to follow the enlisted-to-officer track. Despite the fact that the services together administer over a dozen programs designed to facilitate the progression of enlisted personnel to officer status, a negligible fraction of enlisted personnel participate in these programs, and a small fraction of officers come from these programs. As we report in Table 4.1, compared to total officer accessions of nearly 17,000, only about 1500 individuals participated in enlisted-to-officer programs in FY96. Since there is nontrivial attrition from these programs, the contribution of program participants to the officer ranks is even smaller than the number of participants. In sum, although there are numerous officer-to-enlisted programs across the services, this track offers few opportunities for enlisted personnel to advance their education.

The final track that enlistees can follow to combine military service and college is the concurrent track. As shown in Table 4.2, the services have numerous opportunities for enlisted personnel and officers on active duty to accumulate college credits. With the exception of some of the advanced degree programs for officers, most of the programs listed in the table are part of a larger DoD-wide program called the Voluntary Education Program, which is intended to provide off-duty civilian educational opportunities to military personnel. As the table shows, all four branches offer tuition assistance to service members who take college courses while in the service and all

Table 4.1

Number of Enlisted-to-Officer Programs and Participants in FY96, by Service

	Number of Programs	Number of Participants
Air Force	5	~350
Navy	4	~450
Marine Corps	4	~350
Army	1	~340
DoD total	14	~1450

SOURCE: Thirtle, forthcoming.

NOTE: Number of participants is approximate.

branches participate in "credit for experience" programs, whereby personnel can receive college course credits for training and experience in their military jobs. In addition, each branch administers a number of other programs that provide educational assistance or opportunities to accumulate college credits.[3]

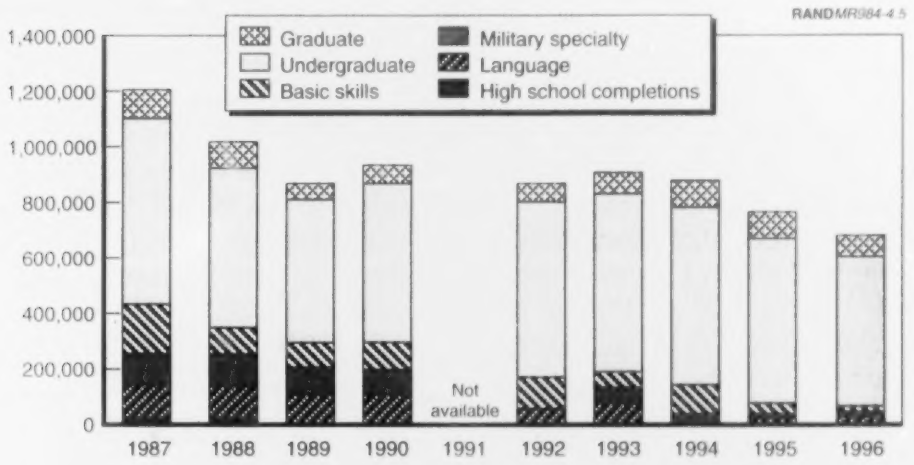
Total enrollment in the Voluntary Education Program has been in the hundreds of thousands each year, as we show in Figure 4.5. Although enrollment has been declining, the percentage drop in enrollment has largely mirrored the decline in personnel resulting from the drawdown. For example, between 1990 and 1996, enrollment in concurrent-track programs fell 27 percent compared to a 30 percent drop in the active duty force and a 25 percent decline in the total

Table 4.2

Programs Offered in Concurrent Track

Air Force	Army	Navy	Marine Corps
Tuition assistance	Tuition assistance	Tuition assistance	Tuition assistance
Credit for experience	Credit for experience	Credit for experience	Credit for experience
Community College of the Air Force (CCAF)	Servicemembers Opportunity Colleges Army Degrees (SOCAD)	Program for Afloat College Education (PACE)	Servicemembers Opportunity Colleges Marine Degree (SOCMAR)
Air Force Institute of Technology (AFIT)	Concurrent Admissions Program for Army Enlistees (CONAP)	Servicemembers Opportunity Colleges Navy Degree (SOCNAV)	Marine Staff Noncommissioned Officer (NCO) Degree Completion Program
	Graduate school	Enlisted Education Advancement Program (EEAP)	Advanced/Special Education Degree Program
		Naval Post-Graduate School	

[3]A summary of these programs is given in Thirtle (forthcoming).



SOURCE: Defense Activity for Non-Traditional Education Support (DANTES), *Servicemembers Opportunity College Guide: 1995–1997*, Pensacola, Florida, September 1997.

Figure 4.5—Enrollment in Voluntary Education Program, by Year and Type of Program

force.[4] The fall in overall enrollments between 1987 and 1996 has resulted largely from reduced participation in basic skills, military specialty, language, and high school completion programs. Enrollment in graduate and undergraduate programs remained stable.

Despite the fact that enrollments are high in programs that allow service members to attain post-secondary education while in the service, relatively few participants appear to attain a B.A. degree through this route. Furthermore, of those who stay until mid-career, relatively few seem to obtain any college in the first eight years of service. We used data from a longitudinal data set, RAND's Enlisted Cohort Database, to determine how many enlisted personnel obtained several levels of education after four, eight, and 12 years in the service. Table 4.3 shows the educational distribution of a cohort of individuals who entered any service in DoD in 1984 and stayed for 12

[4]Since one individual can account for multiple enrollments, the percentage drop in enrollments does not necessarily reflect the percentage change in individual participation.

years of service (YOS). Table 4.4 shows similar statistics for the Air Force. At entry, 95.4 percent of the all-DoD cohort had a high school degree or less, while 4.6 had more than a high school degree. After four years of service, the educational distribution was about the same as at entry. At YOS 8, this cohort had increased its educational attainment, but the fraction with more than a high school degree was still less than 10 percent. After eight years, 7.5 percent had some college and about 1 percent had a B.A. degree or more. After 12 years, the educational attainment rose even more. A little over 40 percent obtained some college, but those who had a B.A. or more were still only 2 percent.

The figures in Table 4.3 suggest that if a service member is going to obtain post-secondary education, he or she is most likely to do so between YOS 8 and YOS 12. By YOS 12, a little over 40 percent have more than a high school degree. This attainment of post-secondary

Table 4.3

Educational Distribution of Enlisted Personnel Who Entered DoD in 1984 and Stayed 12 YOS—at Entry, YOS 4, YOS 8, and YOS 12 (in percentage)

Educational Attainment	High School Degree	Some College	B.A. Degree or More
At entry	95.4	4.1	0.4
After 4 years	95.1	4.3	0.6
After 8 years	91.6	7.5	0.9
After 12 years	58.9	38.9	2.2

SOURCE: RAND Enlisted Cohort Database.

Table 4.4

Educational Distribution of Enlisted Personnel Who Entered the Air Force in 1984 and Stayed 12 YOS—at Entry, YOS 4, YOS 8, and YOS 12 (in percentage)

Education Attainment	High School Degree	Some College	B.A. Degree or More
At entry	95.7	4.3	0.0
After 4 years	95.3	4.6	0.1
After 8 years	87.9	11.3	0.8
After 12 years	4.5	92.7	2.8

SOURCE: RAND Enlisted Cohort Database.

education is even greater for those in the Air Force, as shown in Table 4.4. By YOS 8, about 12 percent of those who stay until 12 YOS in the Air Force have more than a high school degree. However, by 12 YOS, this attainment rises to 96 percent, far in excess of the 41 percent DoD-wide. Nonetheless, even for the Air Force, only 3 percent have a B.A. degree by YOS 12.

The patterns shown in Tables 4.3 and 4.4 may have shifted for more-recent entry cohorts, at least for the Air Force. Our enlisted cohort database indicates that a greater fraction of recent Air Force entry cohorts are attaining some college in their first four years of service. For example, for the 1992 Air Force entry cohort, 71 percent of those who served for four years had more than a high school degree. This figure was only 1 percent for the FY88 Air Force entry cohort. This shift is not observed for the other services, and is likely to be related to policy differences between the CCAF and the SOC used in the other services.[5] Among the Army personnel who entered in FY92 and stayed four years, only 1 percent had more than high school after four years. This figure was less than 1 percent for the Navy.

In sum, there are five tracks that military personnel can follow to combine military service and college. The officer, the college-then-enlist, and the enlisted-to-officer tracks provide participants with college credit and/or a college degree, but these tracks serve relatively few individuals. The enlisted-then-college track serves the largest number of service members. However, although the MGIB benefits are generous compared with federal sources of financial aid, their growth rate has lagged behind the growth in college costs. Another shortcoming of the MGIB is that in general the active components do not realize a return on their human capital investment. Finally, the concurrent track offers college courses to many service members, but few, with the exception of those in the Air Force, obtain significant amounts of college credit or a college degree. In terms of providing opportunities to combine military service and a college education, this is a drawback because it implies that potential

[5]The CCAF was established to help members obtain credit for training they received in the Air Force. SOC is oriented toward eliminating obstacles to college completion faced by service members who must relocate frequently.

recruits cannot view the concurrent track as a viable way to complete a college education and serve in the military.[6]

Of the two largest tracks—the enlisted-then-college track and the concurrent track—the track most likely to increase one's educational level is the enlisted-then-college track. In other words, the predominant way of combining military service with college requires that service members leave the military. To see this, we compared 30-year-old military personnel with 30-year-old veterans. If the concurrent track was the most important means by which service members obtained a post-secondary education, we would observe that the educational achievement of the two groups would be about the same. But, in fact, we observe that far more veterans have obtained post-secondary education. Specifically, we find that 48.5 percent of military personnel in the October 1995 active duty inventory had more than a high school education at age 30. In contrast, 89 percent of veterans in the civilian sector in 1995 had more than a high school education at age 30.[7]

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[6]This does not mean that these programs are not valued by service members. A recent study by the Center for Naval Analyses has shown that these programs increase retention among Navy personnel (personal communication from Rear Admiral Barbara McGann, Commander of Navy Recruiting Command, March 1998; also see Burlage, 1998).

[7]This figure is computed from the 1995 Veteran's Supplement to the Current Population Survey. While the data we used to calculate these numbers do not indicate when the service member acquired the education, we can infer that although some military personnel enter with college credits and some take college courses while in the service, a large fraction get post-secondary education after they have left the service. This is because the Enlisted Cohort data show that service members who separate before age 30 do not have more education on average than those who stay in the service, and a Center for Naval Analyses study finds that members with more education are more likely to be retained. As shown by Buddin, Levy, Hanley, and Waldman (1992), those in the Army with post-secondary education are only slightly more likely than high school graduates to separate at their reenlistment point. The effect is somewhat bigger for Air Force personnel, but still not large enough to explain the large difference in the post-secondary educational attainment between 30-year-old veterans and 30-year-old military personnel. Hence, the higher education observed for 30-year-old veterans is likely to be the result of schooling acquired after departing from the service.

Chapter Five

DESIGNING POLICY OPTIONS TO ATTRACT COLLEGE-BOUND YOUTH: ISSUES AND EXAMPLES

We have discussed a number of major challenges to the current recruiting environment:

- The services are having problems meeting recruiting objectives.
- Relative returns to a college education rose rapidly over the last decade and a half, resulting in tough competition for recruits from the college market and subsequent skilled civilian employment.
- At the time that the military is demanding a greater fraction of high quality recruits, relatively more high quality youth are attending post-secondary institutions.
- Youth interest in enlisting has dropped, while youth interest in attending college has grown.
- One of the largest of the military's college benefit programs does not generate much of a gain in education level.
- The military college-benefit program that boosts education the most requires participants to separate from the service, has not kept pace with college costs, and yields no human capital return to the active military components.
- Existing college-first programs in the military, such as the loan repayment program, are small in scale and serve few enlistees.

What types of policy options might DoD consider to address these challenges? An obvious option would be to expand existing alternatives that provide opportunities to combine military service and col-

lege attendance. For example, the college loan repayment program could be significantly expanded and offered to high quality youth who served in additional occupations. For this program to be expanded, more resources would be needed to increase the program's overall budget. Offering the program to more youth without increasing the overall amount of resources devoted to the program would not significantly increase the effectiveness of the program.

In addition to expanding existing programs, entirely new programs could be adopted. Future research should examine what specific options are the most feasible and cost-effective. In this chapter, we discuss some examples of additional options. These examples would expand the college-first path or the enlist-then-college path.

ISSUES IN WEIGHING ALTERNATIVE RECRUITING POLICY OPTIONS

In weighing various recruiting policy options, several issues would need to be considered. Although we have not identified the best option, we discuss some of these issues (see Table 5.1).

Table 5.1

Issues to Consider When Weighing Options

Overall effectiveness
–quantity of enlistments
–quality of enlistments
–poaching on MGIB/College Fund takers
–expected man-years (e.g., attrition, retention)
–reserve personnel outcomes
Returns to individual
–timing of college education
–financial returns
Returns to military of college-trained recruits
–general returns
–returns from job matching
Cost to DoD
–direct costs
–start-up and implementation costs
Age of force
Enlisted/officer distinction

A key issue in determining the best policy option is effectiveness. Not only is it important to consider the effect of the policy on the quantity and quality of recruits attracted, one should also consider the effect on attrition, retention, and the flow of prior-service personnel to the reserves. A policy may increase enlistment rates but reduce retention rates or the prior-service accessions into the reserve components. Consequently, expected man-years may decline. For example, past research indicates that the ACF increases high quality enlistments and reduces attrition rates, but may also reduce retention rates (Asch and Dertouzos, 1994). Another consideration is whether the policy creates a net increase in total enlistments or simply attracts recruits at the expense of existing college-benefit programs such as MGIB, ACF, or NCF.

A different type of consideration that is related to effectiveness is the value of the policy option to the individual recruit. The timing of a college education is one element of the return of the option to the individual. For example, an option that allowed the individual to attend college first, then enter the military would deliver more value than an option that required the individual to attend college after military service, particularly if the military compensated the person for having greater skills while in the military job. The reason is that the individual realizes the financial return to a college degree earlier, at around age 22 rather than around age 26. Furthermore, if the individual places a value on attending college at the same time as his or her high school peers, then this option provides a nonmonetary return as well. Another element of the return to the individual of a given option is the size of the financial return derived from the education granted by the policy. For example, an option that offered a four-year degree would produce a greater return to the individual than an option that offered a two-year degree.

A consideration that we raised earlier in the report is whether the military reaps a return from the educational benefit it provides. This return could come in the form of a more-productive service member. Programs that offer education after an individual has separated from the military, such as the MGIB, do not generate productivity gains for the active military component, whereas programs that offered educational benefits concurrently with service or prior to enlistment would have the potential to yield this type of return to the military.

However, the MGIB was designed as both a transition benefit and enlistment incentive.

The expected return to the military of paying for the post-secondary education of recruits who obtain their education prior to enlistment depends in part on the extent to which the skills learned in school match the skills required in the individual's job while in the service. The better the match, the greater the return to the military on pre-service educational investments. For example, individuals who earn a civilian degree to be a medical assistant before enlistment might be subsequently matched to a health-related military occupation at the time of enlistment. Such occupational matching might enable the military to substitute military-provided education and training with civilian-provided education or training because individuals would receive their training in a civilian educational institution prior to enlistment rather than in a military institution during enlistment. Therefore, it makes the most sense for the military to pay for pre-service education for individuals entering occupations that are closely tied to their civilian education.

The expected returns to the military of paying for education obtained before enlistment will also depend on the military's ability to ensure that individuals do not renege on their service requirement but enter the military and meet their service obligation after they've finished schooling. Since the skills that individuals will learn in post-secondary educational institutions will most likely be general—that is, they can be used in both the military and in the civilian sector—the military will need to give individuals an incentive to enter service and complete their obligation rather than work for a civilian employer. Such methods are used in other military educational programs. For example, ROTC and the service academies require individuals who fail to meet their obligations to repay a pro-rated portion of their educational expenses. The services could use similar methods in a college-first program.

In assessing the desirability of an option, it is also important to evaluate the costs of the policy. Two types of costs are relevant for assessing new recruiting options that combine military service and college: the direct costs of the program and start-up costs. The direct costs of a program would be the recurring costs of implementing the program that DoD would expect to incur every year. Compensa-

tion is a direct cost that is likely to go up if the military starts to recruit individuals with preservice general education. If the education is general and makes the workers more productive in the military and civilian settings, the military will be required to pay such persons more to attract them from their next-best civilian alternative and to retain them in the service. Start-up costs would cover the additional costs associated with the early phases of initiating a new program.

Another issue to consider in weighing the cost-effectiveness of a policy is related to the age structure of the active force. A program that expanded college benefits by lengthening the first term of enlistment or a program that provided college prior to enlistment would generate an older but not a more experienced force. An older force may be more costly to the extent that older personnel are more likely to have dependents and military compensation partially depends on the number of dependents one has. A different type of force structure issue is the classic distinction between enlisted personnel and officers. A program that offered more opportunities to move from the enlisted ranks to being an officer or a program that transformed the enlisted force into a largely college-educated group would challenge many of the traditional differences between enlisted personnel and officers.

EXAMPLES OF ADDITIONAL POLICY OPTIONS

An alternative set of programs that expand options for combining military service and college attendance would be based on the college-first option and would supplement or expand the current loan repayment program. For example, the services could significantly expand the recruitment of college dropouts. As discussed in Chapter Three, dropouts are able to earn more in the civilian labor market on average than high school graduates. Since enlisted military compensation is designed in large part to be competitive with the civilian wages of high school graduates, the military will need to determine whether existing incentives are sufficient to attract individuals into the military who paid for their college education on their own. Currently, the services allow college dropouts to enter the service at a higher pay grade than recruits who only have a high school degree. Whether this incentive is sufficient is unclear.

Another example would be to offer high school seniors an option that would allow them to attend college before serving in the military. For instance, a recruiter could offer a high school senior the option of first attending either a two-year or four-year college at the military's expense and then enlisting at a higher pay grade. A variant of this option might include having the individual serve in a reserve or guard component during college. A reserve obligation would provide the active components with college-educated enlistees who also have military training and acculturation.

Yet another way to expand the college-first path is to increase the presence of recruiters on two-year campuses, i.e., to recruit directly from community colleges to a greater extent. A disadvantage of this approach is that many community college students have already been contacted by a recruiter when they were in high school. The fact that they did not enlist after high school and chose to attend community college instead suggests that they have relatively little interest in military service. Put differently, they are a group that has already self-selected out of military service. However, an advantage of this approach is that individuals who were uninterested in military service when they were high school seniors may find military service more attractive once they have experienced college, independence from parents, and the "real world" more generally. Such an approach would need to ensure that recruiters had the appropriate incentives to seek out more recruits on community college campuses.

An example of a new policy option that would allow enlisted personnel to combine college and military service is a program where enlistees break from the service, attend college funded by the military, then return to the service after graduation. For example, the individual would enlist for a tour of duty. Once the tour is complete, the individual would attend either a two- or four-year college. Upon completion of college, the individual would return as an enlistee for a second tour of duty. This option would resemble an enlisted-to-officer program, but the individual would return as an enlistee rather than as an officer. This option would also resemble the current MGIB, ACF, and NCF programs in that the individual would depart from the service to use the educational benefit offered by the military. The difference is that the military would offer an inducement for the individual to return after obtaining an education.

This option would provide an incentive to a high school senior to not only enlist in the military but also to reenlist after he or she completes college. Since it would target seniors, it would be a recruiting incentive. Alternatively, the option could target current enlistees contemplating reenlistment. The military would offer personnel the option to leave service, attend college, and return as a higher paid enlistee. If it targeted current enlistees, this option would operate as a reenlistment incentive as well. A variant of this policy option would be to include a reserve component obligation while the individual is in college.[1]

Design of these programs would require careful consideration and evaluation. Just as the design of the Army College Fund and the Navy College Fund was based on the results of a national experiment that examined the effects of alternative educational benefit structures,[2] the design of a set of programs expanding the current college-first path or the enlist-college path would benefit from careful evaluation of an experiment. We have suggested examples of programs that might be tested in an experiment.

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[1]Many issues would need to be addressed for this option to be made operational. For example, the pay grade at which individuals would enter when they completed their education would need to be determined, as would the occupational area.

[2]Between 1980 and 1981, the Office of the Secretary of Defense conducted the Educational Assistance Test Program, a national experiment in which regions of the country were divided into a control cell and three test cells. Each test cell offered an alternatively designed educational benefit. One of the test cells offered the Ultra-VEAP educational benefit, which was found to increase high quality enlistments (Fernandez, 1982). In 1984, the Ultra-VEAP was renamed the Army College Fund.

Chapter Six

CONCLUSIONS AND AREAS FOR FUTURE RESEARCH

When faced with recruiting problems, recruiting policymakers can turn to a set of well-known policy levers including increasing advertising outlays, raising the number of recruiters, boosting recruiting incentives, and others. Given current ongoing recruiting difficulties and the change in alternatives facing youth over the last decade, considering nontraditional policy options that expand upon today's set seems warranted. We focus here on a policy approach that directly responds to several key features of recruiting challenges, including increases in the fraction of high quality youth who are attending post-secondary institutions, declines in high quality youth interested in joining the military, the dramatic rise in the college premium, and the erosion of MGIB benefits relative to tuition costs. This approach is to develop or expand programs designed to attract more college-bound youth into the military.

We do not evaluate specific programs designed to enlist college-bound youth, but we do indicate the considerations that need to be made in evaluating the relative merits of various alternatives. Among others, these considerations include a program's impact on recruit quality and quantity, expected man-years, returns to the recruit and to the military, costs, force age distribution, and others. We provide two types of examples of programs that target college-bound youth. The first, an extension of the current loan repayment program, would allow the recruit to attend college before entering the military. This could be implemented by recruiting college dropouts or enlisting two-year college graduates. A second way of combining military service with college would pay for service mem-

bers to attend college after serving a term of enlistment, with the individual returning for another term of service after graduation.

While programs to attract college-bound youth show promise given current recruiting difficulties and the nature of competition from the civilian sector, specific design features of such programs would require careful study. An obvious approach to identifying optimal programs would be to conduct experiments similar to those that helped inform creation of the Army College Fund and Navy College Fund.

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